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Peoples - Rogers Park
H4



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**SITE INVESTIGATION REPORT/
REMEDIAL OBJECTIVES REPORT/
REMEDIAL ACTION PLAN/
REMEDIAL ACTION COMPLETION REPORT**

**THE PEOPLES GAS LIGHT AND COKE COMPANY
ROGERS PARK SUBSTATION
6659 NORTH KEDZIE AVENUE
CHICAGO, ILLINOIS**

**FOR CP CLARE CORPORATION AND
GENERAL SEMICONDUCTOR, INC.**

**D&M Job No. 30413-008-007
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EXECUTIVE SUMMARY

An environmental investigation was undertaken at the Peoples Gas Light and Coke Company - Rogers Park Substation facility located at 6659 North Kedzie Avenue (Cook County) in Chicago Illinois (Peoples Gas or the Subject Site). The investigation was prompted as a result of the detection of subsurface soil contamination at the property located at 3101 West Pratt Avenue (3101 Site), at an area adjacent to the northern property boundary of the Subject Site. No groundwater contamination was found on the 3101 Site, and the Illinois Environmental Protection Agency (IEPA) concurred with the finding that the soil component of the groundwater ingestion exposure pathway should be eliminated from consideration.

The 3101 Site was voluntarily entered into the IEPA's Site Remediation Program. IEPA assigned a site number of 0316020001 (Cook County) for the 3101 Site. Initially, an extensive investigation of the 3101 Site was conducted in an effort to determine the presence and extent of contamination. Soils contaminated with various chlorinated solvents and heavy metals (specifically mercury, chromium, and lead) were found to exist from the near surface to depths of approximately 17 feet along the western half of the south property line area on the 3101 Site. This information was provided to the IEPA. In response, the IEPA requested that CP Clare Corporation and General Semiconductor, Inc. (fka General Instrument Corporation), collectively the parties undertaking remediation of the 3101 Site (the Remediating Parties), make contact with appropriate representatives of Peoples Gas, provide pertinent analytical findings, and request permission to conduct a limited (i.e., focused) soil investigation on the Peoples Gas property in proximity to the common property line.

Several phases of soil investigation were carried out from January 1996 through November 1997 for the purpose of delineating the lateral and vertical extent of soil contamination. Two sets of proposed soil cleanup objectives were developed as the basis against which to compare the resulting analytical data. The first set assumed a residential future use of the Peoples Gas property; the second set assumed a commercial/industrial future use of the Peoples Gas property. Both of these sets of soil

cleanup objectives had previously been approved by the IEPA for use on the 3101 Site. As such, it was assumed that they would equally apply on the Peoples Gas property given its similar hydrogeologic setting, current industrial use, and theoretically possible residential future use. Based on the results of the investigations, soils were found to exceed one or both sets of proposed soil cleanup objectives at certain locations on the Peoples Gas property for various chlorinated solvents. No mercury, chromium or lead contamination above proposed soil cleanup objectives was detected on the Peoples Gas property. The potential presence of contaminants, other than volatile organic compounds, mercury, lead, and chromium, was not evaluated since other contaminants were not found to be of concern on the adjacent 3101 Site which formed the basis of the investigation.

Representatives of Peoples Gas and the Remediating Parties agreed upon a remedial strategy for addressing the soil contamination on the Peoples Gas property which consisted of excavation followed by low temperature thermal desorption (to be conducted on the 3101 Site). Remedial activities on the Peoples Gas Site were scheduled to occur concurrent with remedial activities on the 3101 Site due to the interrelated nature of planned activities, including excavation and treatment of soils from both sites along the common property line and nearby sewer work on the 3101 Site. The affected area of the Peoples Gas property is in close proximity to large diameter subsurface natural gas transmission mains and appurtenant equipment. As such, careful coordination and execution of the work was imperative in order to protect the infrastructure. Because of the depth to which soil contamination was found to exist on the Peoples Gas property, installation of steel sheet piling was required to prevent undermining of the transmission mains. Approximately 275 lineal feet of cantilevered steel sheeting was installed to a depth of 40 feet below ground surface. The sheeting will remain in place.

Following installation of the sheet piling, excavation of impacted soils commenced. An estimated 2,340 cubic yards of soils were excavated from the Peoples Gas Site, stockpiled within the 3101 Site building (a RCRA containment building), characterized for their chemical content, and, where indicated, treated on the 3101 Site via low temperature thermal desorption in accordance with Dames & Moore's December 13, 1995 *Design Report*. Confirmatory excavation floor and wall samples were also collected in accordance with the *Design Report*. Some of the stockpiled soils found not to exceed IEPA-approved residential soil cleanup objectives, as well as thermally treated soils, were returned to the open excavations on the Peoples Gas property in accordance with the terms established by representatives of Peoples Gas and the Remediating Parties, and consistent with the prescribed soil management methods outlined in the *Design Report*.

Low temperature thermal desorption treatment activities at the 3101 Site voluntarily ceased on



October 2, 1996 as a result of concerns expressed by the public and governmental authorities. At that time, approximately 92% (2,340 of 2,530 cubic yards) of the impacted soils on the Peoples Gas property had already been remediated via excavation. A portion of the excavated soils had already been thermally treated and returned to the Peoples Gas open excavations. The additional excavated soils which had been staged in the building at 3101 West Pratt Avenue awaiting thermal treatment were instead transported off site for incineration between December 1996 and February 1997. No additional impacted soils were excavated from the Peoples Gas Site following the October 2, 1996 shutdown. Following discussions between representatives of Peoples Gas and the Remediating Parties, it was agreed that no additional soils would be excavated and that soils to be used for backfilling would be imported to the Peoples Gas Site from a quarry. Crushed aggregate meeting the Illinois Department of Transportation materials specifications for CA-6 or CA-7, commonly used in road construction as asphalt subbase, was brought to the Peoples Gas Site for use as backfill. This work was completed in October through December 1997. Site regrading, regravelling, fence restoration and other related tasks were also completed at that time.

At the close of remedial activities and site restoration, certain areas of the Peoples Gas Site remain underlain by soils with contamination above residential but below commercial/industrial soil cleanup objectives. As such, a deed restriction will be applied to the impacted areas ensuring a future commercial/industrial land use. Scaled drawings and legal descriptions for these areas are provided in this report. In addition, the drawings and legal descriptions delineate the aerial extent of the investigations carried out on the Peoples Gas property to which this report is limited. A focused No Further Remediation letter, conditioned upon implementation of the future commercial/industrial land use for the two areas where contamination will remain, and limited to the area and contaminants studied, is requested.

**SITE INVESTIGATION REPORT/
REMEDIAL OBJECTIVES REPORT/
REMEDIAL ACTION PLAN/
REMEDIAL ACTION COMPLETION REPORT
THE PEOPLES GAS LIGHT AND COKE COMPANY
ROGERS PARK SUBSTATION
CHICAGO, ILLINOIS**

INTRODUCTION

An environmental investigation was undertaken at the Peoples Gas Light and Coke Company - Rogers Park Substation facility located at 6659 North Kedzie Avenue (Cook County) in Chicago, Illinois (Peoples Gas or the Subject Site). Refer to Figure 1 for the location of the Subject Site. The investigation was prompted as a result of the detection of subsurface soil contamination at the property located at 3101 West Pratt Avenue (3101 Site) at an area, adjacent to the northern property boundary of the Subject Site in proximity to the common property line. The work reported herein was conducted in accordance with the Illinois Environmental Protection Agency's (IEPA's) Site Remediation Program regulations contained in Title 35 Illinois Administrative Code (35 IAC) Part 740 and with the Tiered Approach to Corrective Action Objectives (TACO) regulations contained in 35 IAC Part 742.

FACILITY BACKGROUND AND USE

The Peoples Gas - Rogers Park Substation occupies 16.15 acres. Most of the Peoples Gas property is occupied by grassy areas, particularly along the southern and eastern portions of the property. The Peoples Gas Site is surrounded by chain link fencing and may only be accessed through a 24-hour guarded entrance. Refer to Figure 2 for a layout of the Site.

According to Peoples Gas representatives, the facility was constructed in 1926 by Peoples Gas as a gas storage facility. The Subject Site housed a 15 million cubic foot waterless (tar-seal) gas holder as well as an exhauster house (now the Sub Shop Building), a compressor room (now the Boiler House, Store Room, and Computer Building), and several other smaller structures. The property was expanded to Albion Avenue on the south with an additional land purchase of 6.2 acres in 1956. Gas storage at the site ceased in 1969 with the gas holder being dismantled at about that time.

The Peoples Gas Site is currently in use as a natural gas transmission station. According to Peoples

Gas representatives, no change from the current land use is planned, particularly in proximity to the study area.

The Subject Site is currently used as a Sub Shop for the North District, and until recently, as a gate station. The Sub Shop building serves as a reporting location for Distribution Department and Service Department crews. Transportation Department personnel service company vehicles in the garage building. Until a few months ago, the fenced substation area (i.e., area near the northern property boundary where soil contamination was found and where remediation activities were carried out) contained a gate station (gas purchase point) which included meter runs, heaters, high pressure regulators, interstation main piping, and medium pressure regulators. Most of this equipment has recently been relocated to a new gate station located about a mile northwest of the Peoples Gas Site. Currently, the area within the substation fencing includes gas heaters, interstation main piping, and medium pressure regulators.

The surrounding land use is as follows: to the east and south are single family residences across Whipple Street and Albion Avenue, respectively; to the west is Kedzie Avenue, then a narrow, vacant grassy strip, then the North Shore Channel; and to the north is the 3101 Site, a currently unoccupied former manufacturing facility.

The legal description for the entire Peoples Gas - Rogers Park Substation facility¹ is as follows:

The South 14 feet of Lot 15, Lots 16 to 27 both inclusive and the North 14 feet of Lot 28, all in Salinger and Hubbards second addition to Rogers Park in the Southwest Quarter of Section 36, Township 41 North, Range 13 East of the Third Principal Meridian.

That part of the North and South alley (now vacated) lying West of North Whipple Street.

That part of North Shore Avenue (now vacated) lying West of North Whipple Street.

Lot 2 in Subdivision of West Half (by area) of Southwest Fractional Quarter of said Section 36 lying North of the Indian Boundary Line, together with the 33 feet East of and adjoining Lot 2 aforesaid, extending from the North line of said Lot 2 extended East, to the South line of said Lot 2 extended

¹The legal description for the total Peoples Gas facility is presented. However, the findings and actions reported herein apply to only a small portion of Area No. 1 (Lot 2) as further defined in the Special Conditions section of this report.

East.

That part of Lot 3 in the Subdivision of the West Half (by area) of the Southwest Fractional Quarter North of the Indian Boundary Line of said Section 36, which lies North of a line 1328.42 feet North of the South line of the Southwest Fractional Quarter of Section 36, Township 41 North, Range 13 East.

Also that part of the West Half of the Southwest Fractional Quarter of said Section 36 South of the Indian Boundary Line, lying North of the South 1328.42 feet and West of the East 505.82 feet of said West Half of the Southwest Fractional Quarter of Section 36, Township 41 North, Range 13 East of the Third Principal Meridian, except that part of Lots 2 and 3 in Subdivision of West Half (W. ½), (in area) of Southwest Fractional Quarter (S.W. Frac. 1/4) of Section 36, Township 41 North, Range 13 East of the Third Principal Meridian, in Cook County, Illinois, lying North of the Indian Boundary Line and lying West of the following described line:

Beginning at a point on the North line of Lot 2, a distance of Forty-eight and Twenty six hundredths (48.26) feet East of the Northwest corner of said lot,

thence South in a straight line to a point on the South line of Lot 3, a distance of Sixty-two and Twenty-three hundredths (62.23) feet East of the Southwest Corner of said Lot 3.

BASIS OF INVESTIGATION

The adjacent 3101 Site was voluntarily entered into the IEPA's Site Remediation Program. Initially, an extensive investigation of the 3101 Site was conducted in an effort to determine the presence and extent of contamination. Soils contaminated with various chlorinated solvents and heavy metals (specifically mercury, chromium, and lead) were found to exist from the near surface to depths of approximately 17 feet along the western half of the south property line area on the 3101 Site². The source of the contamination in this area was believed to have been historic land surface releases of solvents on the 3101 Site. Because this area is flat, it appears that sheet flow across the common property line onto the Peoples Gas Site may have occurred. This information was provided to the IEPA in a May 8, 1995 Dames & Moore document entitled *Site Investigation Report/Site Remediation Work Plan, CP Clare/General Instrument Corporation Site, 3101 West Pratt Avenue, Chicago, Illinois*. In response to this report, the IEPA requested that the Remediating Parties make

²Contaminated soils were also encountered at other locations on the 3101 Site, but none close to the common property boundary. As such, these other locations are not pertinent for purposes of this report. See Dames & Moore's *Remedial Action Completion Report, 3101 West Pratt Avenue Site* dated December 24, 1997.

contact with appropriate representatives of Peoples Gas, provide pertinent analytical findings, and request permission to conduct a limited (i.e., focused) soil investigation on the Peoples Gas property in proximity to the common property line.

PEOPLES GAS SITE INVESTIGATION

Several phases of site investigation were carried out on the Peoples Gas Site from January 1996 through November 1997 for the purpose of delineating the lateral and vertical extent of soil contamination. A total of 21 soil borings were advanced at various locations in proximity to the north property line using either a geoprobe unit or hand augering. Appendix A contains copies of the soil boring logs. Samples were collected using polyethylene liners within the geoprobe tool. Portions of the liner were then capped and placed on ice pending shipment to the laboratory, or were slit open along the long axis with the soil contents transferred to laboratory-provided, clean glass jars and placed on ice. Samples obtained via hand auger were likewise transferred to laboratory-provided, clean glass jars pending shipment to the lab. An additional soil volume was also subjected to headspace analysis using a photoionization detector (PID). Samples were selected for analysis based on visual and olfactory observations, headspace readings, and spatial position. Many of the samples were collected within the upper few feet to assess the potential for surface sheet flow followed by infiltration into the soils on the Peoples Gas Site from historic surface land releases which may have occurred on the 3101 Site. In addition, numerous samples were collected between depths of 14 and 18 feet below ground surface (bgs) to evaluate the potential for preferential migration along the existing combined sanitary and storm sewer which traverses the 3101 Site in proximity to the Peoples Gas property. The invert of the sewer occurs at a depth of approximately 15 feet bgs.

Analytical samples were kept on ice and couriered to the laboratory within 48 hours of collection. Refer to Figure 3 for the locations of the soil borings. Appropriate decontamination procedures for soil sampling were followed throughout the investigation. Most of the borings were advanced to a depth of 25 feet bgs. Soils were classified in accordance with the Unified Soil Classification System. With the exception of three borings, only silty clay and clayey silt soils, some with occasional minor amounts of sand or gravel, were encountered. Borings PG-6, PG-7 and PG-8 encountered sand lenses no more than two feet thick between 7 to 11 feet bgs. These three borings are nearest the large diameter piping within the substation, and the coarser soils represent fills associated with pipe backfill.

On the adjacent 3101 Site, two soil borings were advanced to a depth of 50 feet bgs. Below the

upper few feet of fill, each boring encountered consistent soil conditions consisting of brown to gray silty clay with a trace of fine to coarse sand and fine gravel throughout the remaining depth drilled. The silty clay units were soft for the upper 40 feet, grading to stiff to a depth of 50 feet bgs. Laboratory permeability testing performed on the silty clay soils indicated a coefficient of permeability of less than 1×10^{-7} cm/sec. On a separate nearby site, an underlying dolomite bedrock aquifer was encountered at an approximate depth of 80 feet bgs. Bedrock on the Subject Site is predicted to occur at similar depth.

Several geotechnical samples were obtained from soil borings advanced on the 3101 Site for the purpose of developing site-specific Tier 2 soil cleanup objectives. Because of the similar nature of the soils on both sites, it is reasonable to apply the 3101 Site geotechnical data to the Peoples Gas Site as well. A summary of the geotechnical data is provided in Appendix B, spreadsheets used to calculate the Tier 2 site-specific soil cleanup objectives are provided in Appendix C, and the IEPA data sheets for Tier 2 calculations are provided in Appendix D.

The occurrence of groundwater within the soil borings was very inconsistent. In this flat study area, the depth at which groundwater was measured ranged from 8 to 17 feet bgs to not observed throughout the total depth drilled, 25 feet. This erratic pattern, coupled with the fine-grained quality of the native soils, suggests that no true water table condition is present in the northern portion of the Peoples Gas property. Groundwater is present only in a perched condition. The silty clays and clayey silts represent an aquitard, retarding both groundwater flow and contaminant migration. No groundwater samples were collected on the Peoples Gas Site.

APPLICABLE REMEDIATION OBJECTIVES

The remediation objectives selected for use at the Peoples Gas Site are identical to those developed for the adjacent 3101 Site. Similarly the analytical suite chosen for the Peoples Gas Site was based on the contaminants of concern identified at the 3101 Site.

Two sets of soil cleanup objectives were established for the 3101 Site: one set assuming a residential future use of the property, and one set assuming a commercial/industrial future land use. A combination of Tier 1/Tier 2 commercial/industrial soil cleanup objectives was established for the site in accordance with the IEPA's TACO regulations found in 35 IAC Part 742. For soils, TACO assumes three possible human exposure pathways, including: 1) the inhalation of vapors or

particulates emanating from contaminated soils, 2) the direct ingestion of contaminated soils, and 3) the potential for the migration of soil contamination, via leaching, into an underlying potable groundwater source (also referred to as the soil component of the groundwater ingestion pathway). With respect to the 3101 Site, the soil component of the groundwater ingestion pathway was excluded from consideration for several reasons: a massive silty clay unit is believed to extend beneath the site to a depth of greater than 50 feet, extremely low measured soil permeabilities, the absence of detected soil contamination above industrial/commercial soil cleanup objectives at depths greater than 13 feet below ground surface, the absence of any potentially potable aquifer within the upper fifty feet of soils, Chicago's provision of and reliance upon potable waters originating from Lake Michigan, the City of Chicago ordinance prohibiting the installation or use of drinking water wells within the city limits, and the Memorandum of Understanding executed between the City of Chicago and the IEPA. Given the proximity of the area of the Peoples Gas Site being remediated to the 3101 Site, coupled with the soil boring logs which revealed predominantly silty clays and clayey silts on the Peoples Gas property, it follows that the soil component of the groundwater ingestion exposure pathway should likewise be eliminated from consideration on the Peoples Gas property. The proposed soil cleanup objectives are based on the two remaining potential human exposure pathways: the inhalation of vapors or particulates emanating from contaminated soils, and the direct ingestion of contaminated soils.

No groundwater contamination above IEPA's TACO Class II groundwater cleanup objectives was found in any of the four groundwater monitoring wells installed and sampled on the adjacent 3101 Site. Three of the monitoring wells, designated as VMW-1, VMW-3, and MW-18, had previously been located within 50 feet of the common property line. The four groundwater wells had been installed in close proximity to some of the more contaminated soil zones on the 3101 Site, yet the samples obtained from these wells did not indicate groundwater contamination. As such, no further evaluation of impacts to groundwater was indicated on the 3101 Site. Since there was no groundwater contamination on the 3101 Site in more heavily contaminated soils, and since there is no usable or potentially potable aquifer underlying the Subject Site for significant depths, no evaluation of the potential for groundwater contamination on the Peoples Gas Site was warranted.

As previously mentioned, two sets of proposed soil cleanup objectives were used as a basis against which to compare the Peoples Gas Site analytical data. These objectives were identical to those used at the adjacent 3101 Site. The first set assumed a residential future use of the Peoples Gas property; the second set assumed a commercial/industrial future use of the Peoples Gas property. The

proposed soil cleanup objectives are presented in Tables 1 and 2 in column form for ease of comparison against the analytical data. Both of these sets of soil cleanup objectives had previously been approved by the IEPA for use on the 3101 Site. As such, it was assumed that they would also apply on the Peoples Gas property given its proximity, similar hydrogeologic setting, current industrial use, and theoretically possible future residential use.

ANALYTICAL RESULTS

As previously mentioned, a total of 21 soil borings were advanced on the Peoples Gas in proximity to the common boundary with the 3101 Site. A total of 49 soil samples were collected from the borings for laboratory analysis. All collected samples were analyzed for Target Compound List - volatile organic compounds (TCL-VOCs) and 19 of the samples were also analyzed for total mercury, chromium and lead. Table 1 presents a summary of the laboratory analytical results from the investigations. The residential and commercial/industrial soil cleanup objectives have also been included in the tables. As previously mentioned, the locations of soil borings are presented on Figure 3. The presence of contaminants, other than volatile organic compounds, mercury, lead, and chromium, was not evaluated since other contaminants were not found to be of concern on the adjacent 3101 Site which formed the basis of the investigation.

Concentrations of the three metals were not found to exist above Tier 1 residential soil cleanup objectives at any of the sample locations on the Peoples Gas Site. The samples analyzed for metals were obtained from the borings nearest the common property line. Since no elevated metals levels were detected in these samples, the three metals were not included in the analytical suite for the remaining samples.

Based on the results of TCL-VOC analysis, soils were found to exceed one or both sets of soil cleanup objectives at certain locations (PG-1, PG-2, PG-13, PG-15, and PG-16) on the Peoples Gas property for various chlorinated solvents, in particular, for vinyl chloride and/or tetrachloroethene (PCE). PCE was apparently used at the 3101 Site as a solvent; vinyl chloride is a naturally occurring degradation product of PCE. Other VOCs were also detected in some instances, but not above proposed cleanup objectives.

REMEDIAL STRATEGY/REMEDIAL ACTION

Prior to remediating the Peoples Gas Site, representatives of Peoples Gas and the parties remediating the 3101 Site agreed upon a remedial strategy for addressing the VOC soil contamination: excavation followed by low temperature thermal desorption. The affected area of the Peoples Gas property was in close proximity to large diameter subsurface natural gas transmission mains and appurtenant equipment. As such, careful coordination and execution of the work was imperative in order to protect the infrastructure. Because of the depth to which soil contamination was found to exist on the Peoples Gas property, installation of steel sheet piling was required to maintain necessary lateral earth pressures against the transmission mains. Approximately 275 lineal feet of cantilevered steel sheeting was installed to an approximate depth of 40 feet below ground surface. The sheeting will remain in place. Related work included removal of chain link fencing, deactivation of a Supervisory Control and Data Acquisition (SCADA) system, and other miscellaneous tasks. Remedial activities on the Peoples Gas Site were scheduled to occur concurrent with remedial activities on the 3101 property due to the interrelated nature of planned activities, including excavation and treatment of soils from both sites along the common property line and nearby sewer work on the 3101 Site.

Following installation of the sheet piling, excavation of impacted soils commenced (August 1996). An estimated 2,340 cubic yards of soils were excavated, stockpiled within the 3101 Site building, characterized for chemical content, and, where indicated, treated on the 3101 Site via low temperature thermal desorption in accordance with Dames & Moore's December 13, 1995 *Design Report*. Confirmatory floor sampling of the excavation was also conducted in accordance with the *Design Report* guidelines and included both VOC and total analysis for mercury, chromium, and lead. Excavation wall sampling was also conducted on the east and west ends of the excavations. However, it was not possible to collect wall samples along the southern portion of the excavation due to the presence of the steel sheet piling. The steel sheeting was installed to coincide with the southernmost row of soil borings which did not indicate the presence of levels of contamination above residential soil cleanup objectives based on laboratory testing of representative samples. The analytical data obtained from the soil borings represents confirmatory wall samples in this area. Table 2 presents the results of confirmatory sampling; Figure 4 presents the highlights of this information graphically. Some of the stockpiled soils found not to exceed IEPA-approved residential soil cleanup objectives, as well as thermally treated soils, were returned to the open excavations on the Peoples Gas property as permitted by Peoples Gas consistent with the soil management methods prescribed in the *Design Report*.

Low temperature thermal desorption treatment activities at the 3101 Site voluntarily ceased on October 2, 1996 as a result of concerns expressed by the public and governmental authorities. At that time, approximately 92% (2,340 of 2,530 cubic yards) of the impacted soils on the Peoples Gas property had already been remediated via excavation. A portion had already been thermally treated and returned to the Peoples Gas open excavations. However, soils which had been staged in the containment building awaiting thermal treatment were instead treated off site via RCRA incineration between December 1996 and February 1997. No additional impacted soils were excavated from the Peoples Gas Site following the October 2, 1996 shutdown. In late 1997, representatives of Peoples Gas and the parties remediating the 3101 Site agreed that no additional soils would be excavated and that additional soils to be used for backfilling the Peoples Gas Site excavation would be imported to the site from a quarry. Crushed aggregate meeting the Illinois Department of Transportation's material specifications for CA-6 or CA-7, commonly used in road construction as asphalt subbase, was brought to the site for use as backfill. This work was completed in October through December 1997. Site regrading, regraveling, fence restoration and other related tasks were also completed at that time.

SPECIAL CONDITIONS

Following remedial activities and site restoration, certain areas of the Peoples Gas Site remained underlain by soils with contamination above residential but below commercial/industrial soil cleanup objectives. As such, a deed restriction will be applied to the impacted areas ensuring a future commercial/industrial land use of these areas. These deed restricted areas are presented on Figure 5. Legal descriptions for these two areas are as follows:

(More westerly parcel): A part of Lot 2 in the subdivision of the West ½ of Lot 1 of the subdivision of the southwest 1/4 of Section 36, Township 41 North, Range 13 East of the third principal meridian, recorded March 27, 1872, in Book 1, Page 60, in the Recorder's Office of Cook County, Illinois, described as follows: commencing at the northwest corner of said Lot 2; thence north 88 degrees 15 minutes 51 seconds east along the north line of said Lot 2 and parallel with the north line of said southwest 1/4 of Section 36-41-13, a distance of 539.50 feet to the point of beginning of the tract herein described; thence continuing north 88 degrees 15 minutes 51 seconds east along said north line a distance of 22.50 feet to a point; thence south 1 degree 44 minutes 09 seconds east a distance of 15.50 feet to a point; thence south 88 degrees 15 minutes 51 seconds west a distance of 22.50 feet to a point; thence north 1 degree 44 minutes 09 seconds west a distance of 15.50 feet to

the point of beginning, and containing 348.75 square feet, more or less.

(More easterly parcel): A part of Lot 2 in the subdivision of the West ½ of Lot 1 of the subdivision of the southwest 1/4 of Section 36, Township 41 North, Range 13 East of the third principal meridian, recorded March 27, 1872, in Book 1, Page 60, in the Recorder's Office of Cook County, Illinois, described as follows: commencing at the northwest corner of said Lot 2; thence north 88 degrees 15 minutes 51 seconds east along the north line of said Lot 2 and parallel with the north line of said southwest 1/4 of Section 36-41-13, a distance of 587.50 feet to the point of beginning of the tract herein described; thence continuing north 88 degrees 15 minutes 51 seconds east along said north line a distance of 46.00 feet to a point; thence south 1 degree 44 minutes 09 seconds east a distance of 10.50 feet to a point; thence south 88 degrees 15 minutes 51 seconds west a distance of 46.00 feet to a point; thence north 1 degree 44 minutes 09 seconds west a distance of 10.50 feet to the point of beginning, and containing 483.00 square feet, more or less.

In addition, Figure 5 shows the planar limits of the study area to which this report is limited. The legal description for the study area is as follows:

A part of Lot 2 in the subdivision of the West ½ of Lot 1 of the subdivision of the southwest 1/4 of Section 36, Township 41 North, Range 13 East of the third principal meridian, recorded March 27, 1872, in Book 1, Page 60, in the Recorder's Office of Cook County, Illinois, described as follows: commencing at the northwest corner of said Lot 2; thence north 88 degrees 15 minutes 51 seconds east along the north line of said Lot 2 and parallel with the north line of said southwest 1/4 of Section 36-41-13, a distance of 224.50 feet to the point of beginning of the tract herein described; thence continuing north 88 degrees 15 minutes 51 seconds east along said north line a distance of 409.00 feet to a point, thence south 1 degree 44 minutes 09 seconds east a distance of 15.50 feet to a point; thence south 88 degrees 15 minutes 51 seconds west a distance of 409.00 feet to a point, thence north 1 degree 44 minutes 09 seconds west a distance of 15.50 feet to the point of beginning, and containing 6,339.50 square feet, more or less.

RESULTS

As previously mentioned, an estimated 2,340 of 2,530 cubic yards of VOC-impacted soils were remediated on the Peoples Gas property via excavation to achieve proposed residential soil cleanup objectives. The results of confirmatory soil sampling, coupled with the investigation data, validate

this finding. Of the remaining areas which were not remediated, representative analytical data indicate that certain VOCs are present above proposed residential but below commercial/industrial soil cleanup objectives. These limited areas will be deed restricted to ensure future commercial/industrial land use.

CONCLUSION

The investigation and remedial effort have been executed in conformance with the Site Remediation Program and TACO regulations found in 35 IAC Parts 740 and 742, respectively. A focused No Further Remediation letter, conditioned upon implementation of the future commercial/industrial land use for the two areas where contamination will remain, and limited to the area (refer to Figure 5) and contaminants studied (mercury, chromium, lead, and VOCs), is requested. The Professional Engineer's certification is included as Appendix D.

REFERENCES

- 1) *Site Investigation Report/Site Remediation Work Plan, CP Clare/General Instrument Corporation Site, 3101 West Pratt Avenue, Chicago, Illinois, Dames & Moore, Inc., May 8, 1995*
- 2) *Design Report, 0316020001 – Cook County, 3101 West Pratt Avenue Site, Chicago, Illinois, Dames & Moore, Inc., December 13, 1995*
- 3) *Site Remediation Work Plan, 3101 West Pratt Avenue Site, Chicago, Illinois, Dames & Moore, Inc., October 13, 1997*



Table 1
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial /Industrial Soil Cleanup Objective	PG 1 8-10'	PG 1 18-20'	PG 2 3-5-4-5'	PG 2 10-12'	PG 2 14-16'	PG 3 10-12'	PG 3 14-16'	PG 3 23-25'	PG 4 14-16'	PG 5 10-12'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)												
Acetone	7,800	100,000	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Benzene	0.8	1.5	bdl	bdl	0.123	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromodichloromethane	10	92	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromoform	52	100	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromomethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Butanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Disulfide	720	9	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Tetrachloride	0.3	0.640	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorobenzene	130	1.3	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorodibromomethane	1,300	1,300	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroform	0.3	0.540	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloromethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethane	1,300	130	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,2-Dichloroethane	0.4	0.7	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethene	700	1,500	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,2-Dichloroethene	780	1,200	1.050	bdl	bdl	0.0126	bdl	1.510	1.280	bdl	bdl	1.060
1,2-Dichloropropane	9	0.5	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
trans-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Ethylbenzene	400	58	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Hexanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
4-Methyl-2-Pentanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Methylene Chloride	13	24	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Styrene	1,500	430	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2,2-Tetrachloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

¹ Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and commercial/industrial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial /Industrial Soil Cleanup Objective	PG 1 8-10'	PG 1 18-20'	PG 2 3-5-4.5'	PG 2 10-12'	PG 2 14-16'	PG 3 10-12'	PG 3 14-16'	PG 3 23-25'	PG 4 14-16'	PG 5 10-12'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)												
Tetrachloroethene	12 ²	110 ²	bdl	bdl	bdl	bdl	bdl	0.2	bdl	bdl	bdl	bdl
Toluene	650	42	bdl	bdl	2.44	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,1-Trichloroethane	1,200	1,200	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2-Trichloroethane	310	1,800	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Trichloroethene	58 ²	364 ²	bdl	bdl	bdl	bdl	bdl	55.4	39.1	bdl	bdl	bdl
Vinyl Acetate	1000	10	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Vinyl Chloride	0.3 ²	1.78 ²	1.07	bdl	49.5	0.694	bdl	bdl	bdl	bdl	bdl	0.297
Xylenes	410	410	bdl	bdl	0.221	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Total Metal Concentrations in mg/kg (ppm) USEPA Methods 6010A and 7470												
Chromium	270	420	21.2	17.5	22.2	18.9	20.6	22.1	21.6	22.2	19.4	18.6
Lead	400	400	15.5	15.2	15.3	15.8	14.0	15.2	15.7	14.2	14.0	14.7
Mercury	10	61	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

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² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/ Industrial Soil Cleanup Objective	PG 5 18-20'	PG 6 9-11'	PG 6 13-15'	PG 7 7-9'	PG 7 13-15'	PG 8 11-13'	PG 8 18-20'	PG 9 11-13'	PG 9 23-25'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)											
Acetone	7,800	100,000	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Benzene	0.8	1.5	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromodichloromethane	10	92	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromoform	53	100	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromomethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Butanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Disulfide	720	9	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Tetrachloride	0.3	0.64	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorobenzene	130	1.3	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorodibromomethane	1,300	1,300	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroform	0.3	0.54	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloromethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethane	1,300	130	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,2-Dichloroethane	0.4	0.7	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethene	700	1,500	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,2-Dichloroethene	780	1,200	bdl	bdl	0.0622	bdl	bdl	bdl	bdl	bdl	bdl
1,2-Dichloropropane	9	0.5	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
trans-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Ethylbenzene	400	58	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Hexanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
4-Methyl-2-Pentanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Methylene Chloride	13	24	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Styrene	1,500	430	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2,2-Tetrachloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Tetrachloroethene	12 ²	110 ²	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

¹ Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/ Industrial Soil Cleanup Objective	PG 5 18-20'	PG 6 9-11'	PG 6 13-15'	PG 7 7-9'	PG 7 13-15'	PG 8 11-13'	PG 8 18-20'	PG 9 11-13'	PG 9 23-25'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)											
Toluene	650	42	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,1-Trichloroethane	1,200	1,200	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2-Trichloroethane	310	1,800	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Trichloroethene	58 ²	364 ²	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Vinyl Acetate	1000	10	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Vinyl Chloride	0.3 ²	1.78 ²	bdl	bdl	0.0755	bdl	bdl	bdl	bdl	bdl	bdl
Xylenes	410	410	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Total Metal Concentrations in mg/kg (ppm) USEPA Methods 6010A and 7470											
Chromium	270	420	15.4	20.7	19.9	18.5	18.6	19.1	17.6	18.6	9.6
Lead	400	400	14.3	15.3	13.4	14.7	13.6	14.4	12.9	13.7	7.7
Mercury	10	61	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison

² Site-specific Tier 2 value presented

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 10 1-3'	PG 10 3-5'	PG 10 9-11'	PG 11 1-3'	PG 11 3-5'	PG 11 7-9'	PG 11 9-11'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)									
Acetone	7,800	100,000	bdl	bdl	bdl	0.1	bdl	bdl	bdl
Benzene	0.8	1.5	bdl	bdl	bdl	bdl	0.0068	bdl	0.0052
Bromodichloromethane	10	92	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromoform	53	100	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromomethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Butanone	--	--	bdl	bdl	bdl	0.0174	bdl	bdl	bdl
Carbon Disulfide	720	9	bdl	bdl	bdl	0.0058	0.0053	0.0051	bdl
Carbon Tetrachloride	0.3	0.640	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorobenzene	130	1.3	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorodibromomethane	1,300	1,300	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroform	0.3	0.540	bdl	0.0175	bdl	bdl	bdl	bdl	bdl
Chloromethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethane	1,300	130	0.0482	0.0241	bdl	bdl	bdl	bdl	bdl
1,2-Dichloroethane	0.4	0.7	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethene	700	1,500	bdl	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,2-Dichloroethene	780	1,200	bdl	bdl	0.0204	0.0186	0.232	bdl	0.0325
trans-1,2-Dichloroethene	1,600	3,100	bdl	bdl	bdl	bdl	0.0302	bdl	0.0086
1,2-Dichloropropane	9	0.5	bdl	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl
trans-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Ethylbenzene	400	58	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Hexanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl
4-Methyl-2-Pentanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Methylene Chloride	13	24	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Styrene	1,500	430	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2,2-Tetrachloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl

Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 10 1-3'	PG 10 3-5'	PG 10 9-11'	PG 11 1-3'	PG 11 3-5'	PG 11 7-9'	PG 11 9-11'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)									
Tetrachloroethene	12 ²	110 ²	bdl	0.0288	bdl	bdl	bdl	bdl	bdl
Toluene	650	42	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,1-Trichloroethane	1,200	1,200	0.0312	0.0133	bdl	bdl	bdl	bdl	bdl
1,1,2-Trichloroethane	310	1,800	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Trichloroethene	58 ²	364 ²	bdl	0.0116	bdl	0.0084	bdl	bdl	0.0075
Vinyl Acetate	1000	10	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Vinyl Chloride	0.3 ²	1.78 ²	bdl	bdl	bdl	bdl	0.141	0.0180	0.0593
Xylenes	410	410	bdl	bdl	bdl	bdl	bdl	bdl	bdl

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² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 12 9-11'	PG 12 11-13'	PG 13 3-5'	PG 13 9-11'	PG 13 11-13'	PG 13 13-15'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)								
Acetone	7,800	100,000	bdl	bdl	bdl	bdl	bdl	bdl
Benzene	0.8	1.5	bdl	bdl	bdl	bdl	bdl	bdl
Bromodichloromethane	10	92	bdl	bdl	bdl	bdl	bdl	bdl
Bromoform	53	100	bdl	bdl	bdl	bdl	bdl	bdl
Bromomethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl
2-Butanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Disulfide	720	9	0.0099	bdl	bdl	bdl	bdl	bdl
Carbon Tetrachloride	0.3	0.640	bdl	bdl	bdl	bdl	bdl	bdl
Chlorobenzene	130	1.3	bdl	bdl	bdl	bdl	bdl	bdl
Chlorodibromomethane	1,300	1,300	bdl	bdl	bdl	bdl	bdl	bdl
Chloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl
Chloroform	0.3	0.540	bdl	bdl	bdl	bdl	bdl	bdl
Chloromethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethane	1,300	130	bdl	bdl	bdl	bdl	bdl	bdl
1,2-Dichloroethane	0.4	0.7	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethene	700	1,500	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,2-Dichloroethene	780	1,200	0.0257	0.0294	4.23	1.65	bdl	bdl
trans-1,2-Dichloroethene	1,600	3,100	bdl	bdl	0.355	0.108	bdl	bdl
1,2-Dichloropropane	9	0.5	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl
trans-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl
Ethylbenzene	400	58	bdl	bdl	bdl	bdl	bdl	bdl
2-Hexanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl
4-Methyl-2-Pentanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl
Methylene Chloride	13	24	bdl	bdl	bdl	bdl	bdl	bdl
Styrene	1,500	430	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2,2-Tetrachloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl

Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 12 9-11'	PG 12 11-13'	PG 13 3-5'	PG 13 9-11'	PG 13 11-13'	PG 13 13-15'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)								
Tetrachloroethene	12 ²	110 ²	bdl	bdl	24.6	41.4	bdl	0.0476
Toluene	650	42	bdl	bdl	bdl	bdl	bdl	bdl
1,1,1-Trichloroethane	1,200	1,200	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2-Trichloroethane	310	1,800	bdl	bdl	bdl	bdl	bdl	bdl
Trichloroethene	58 ²	364 ²	3.82	0.281	3.96	7.38	bdl	0.008
Vinyl Acetate	1,000	10	bdl	bdl	bdl	bdl	bdl	bdl
Vinyl Chloride	0.3 ²	1.78 ²	bdl	bdl	bdl	bdl	bdl	bdl
Xylenes	410	410	bdl	bdl	bdl	bdl	bdl	bdl

Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 14 3'-5'	PG 14 5'-7'	PG 15 3'-5'	PG 15 5'-7'	PG 15 7'-9'	PG 16 1'-3'	PG 16 3'-5'	PG 17 2'-4'	PG 17 16'-18'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)											
Acetone	7,800	100,000	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Benzene	0.8	1.5	0.0056	bdl	bdl	0.0052	bdl	0.0182	bdl	bdl	bdl
Bromodichloromethane	10	92	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromoform	53	100	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromomethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Butanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Disulfide	720	9	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Tetrachloride	0.3	0.640	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorobenzene	130	1.3	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorodibromomethane	1,300	1,300	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroform	0.3	0.540	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloromethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethane	1,300	130	bdl	bdl	bdl	bdl	bdl	bdl	bdl	0.0184	bdl
1,2-Dichloroethane	0.4	0.7	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethene	700	1,500	bdl	bdl	bdl	0.0149	bdl	bdl	0.0525	bdl	bdl
cis-1,2-Dichloroethene	780	1,200	0.101	0.567	1.42	5.74	0.0516	0.0688	22.60	0.128	0.0167
trans-1,2-Dichloroethene	1,600	3,100	0.0062	0.102	0.314	0.17	bdl	0.0246	1.81	0.0208	bdl
1,2-Dichloropropane	9	0.5	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
trans-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Ethylbenzene	400	58	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Hexanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
4-Methyl-2-Pentanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Methylene Chloride	13	24	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Styrene	1,500	430	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2,2-Tetrachloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 14 3'-5'	PG 14 5'-7'	PG 15 3'-5'	PG 15 5'-7'	PG 15 7'-9'	PG 16 1'-3'	PG 16 3'-5'	PG 17 2'-4'	PG 17 16'-18'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)											
Tetrachloroethene	12 ²	110 ²	0.0088	0.019	2.12	28.2	0.0083	0.15	2.81	bdl	bdl
Toluene	650	42	bdl	bdl	bdl	bdl	bdl	0.0083	bdl	bdl	bdl
1,1,1-Trichloroethane	1,200	1,200	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2-Trichloroethane	310	1,800	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Trichloroethene	58 ²	364 ²	0.0184	0.0242	1.26	9.51	0.112	0.14	2.41	0.0611	9.750
Vinyl Acetate	1000	10	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Vinyl Chloride	0.3 ²	1.78 ²	bdl	bdl	bdl	bdl	bdl	bdl	0.713	bdl	bdl
Xylenes	410	410	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

¹ Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 18 3'-5'	PG 18 17'-19'	PG 19 3'-5'	PG 19 19'-21'	PG 20 3'-5'	PG 20 17'-19'	PG 21 3'-5'	PG 21 15'-17'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)										
Acetone	7,800	100,000	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Benzene	0.8	1.5	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromodichloromethane	10	92	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromoform	53	100	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Bromomethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Butanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Disulfide	720	9	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Carbon Tetrachloride	0.3	0.640	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorobenzene	130	1.3	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chlorodibromomethane	1,300	1,300	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloroform	0.3	0.540	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Chloromethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethane	1,300	130	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,2-Dichloroethane	0.4	0.7	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1-Dichloroethene	700	1,500	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,2-Dichloroethene	780	1,200	0.0557	1.150	0.121	0.0243	0.0661	bdl	bdl	bdl
trans-1,2-Dichloroethene	1,600	3,100	0.0094	bdl	0.0219	bdl	0.0113	bdl	bdl	bdl
1,2-Dichloropropane	9	0.5	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
cis-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
trans-1,3-Dichloropropene	0.1	0.23	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Ethylbenzene	400	58	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
2-Hexanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
4-Methyl-2-Pentanone	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Methylene Chloride	13	24	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Styrene	1,500	430	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2,2-Tetrachloroethane	--	--	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

¹ Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

Table 1 (con'd)
Phase II Soil Analytical Results
Peoples Gas Property
Chicago, Illinois

Sample Location/Depth	Residential Soil Cleanup Objective ¹	Commercial/I ndustrial Soil Cleanup Objective ¹	PG 18 3'-5'	PG 18 17'-19'	PG 19 3'-5'	PG 19 19'-21'	PG 20 3'-5'	PG 20 17'-19'	PG 21 3'-5'	PG 21 15'-17'
Target Compound List - Volatile Organic Compounds in mg/kg (ppm) (USEPA Method 8240)										
Tetrachloroethene	12 ²	110 ²	bdl	bdl	bdl	bdl	0.0295	bdl	bdl	bdl
Toluene	650	42	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,1-Trichloroethane	1,200	1,200	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
1,1,2-Trichloroethane	310	1,800	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Trichloroethene	58 ²	364 ²	0.0396	11.60	0.0213	bdl	0.0461	bdl	bdl	bdl
Vinyl Acetate	1000	10	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Vinyl Chloride	0.3 ²	1.78 ²	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl
Xylenes	410	410	bdl	bdl	bdl	bdl	bdl	bdl	bdl	bdl

¹ Soil cleanup objectives shown above reflect the site-specific soil cleanup objectives which have been approved by the IEPA for the 3101 West Pratt Avenue, Chicago site. Columns presenting soil cleanup objectives under residential and industrial/commercial future land use scenarios are provided for comparison.

² Site-specific Tier 2 value presented.

TABLE 2
SUMMARY OF ANALYTICAL RESULTS
CONFIRMATORY SOIL SAMPLES
PEOPLES GAS PROPERTY

PARAMETER	RESIDENTIAL CLEANUP OBJECTIVE	COMMERCIAL/ INDUSTRIAL CLEANUP OBJECTIVE	E019 (12.5')	E020 (12')	E021 (12')	E022 (12')	E023 (12.5')	E024 (15')	E027 (8')
TARGET COMPOUND LIST - VOLATILE ORGANIC COMPOUNDS (ppm)									
Acetone	7,800	100,000	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	0.8	1.5	BDL	BDL	0.001	0.005	BDL	0.006	BDL
Bromodichloromethane	10	92	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	130	1.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	0.3	0.540	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	700	1,500	BDL	BDL	BDL	BDL	BDL	BDL	0.005
1,2-Dichloroethene (total)	780	1,200	0.027	0.05	1.923	0.194	BDL	0.02	0.774
Ethylbenzene	400	58	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	13	24	BDL	BDL	BDL	BDL	BDL	BDL	0.022
Tetrachloroethene	12*	110*	BDL	BDL	BDL	0.001	BDL	BDL	0.001
Toluene	650	42	0.019	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	1,200	1,200	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	310	1,800	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	58*	364*	0.096	0.624	0.378	0.25	BDL	BDL	0.408
Vinyl Acetate	1,000	10	BDL	BDL	0.014	BDL	BDL	BDL	BDL
Vinyl chloride	0.300*	1.78*	0.013	BDL	BDL	BDL	BDL	0.006	0.446
Xylenes (total)	410	410	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Other VOCs	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TOTAL METALS (ppm)									
Chromium	270	420	16.7	18.6	15.9	19.7	13.3	14.4	15.6
Lead	400	400	18.6	11.3	10.8	7.57	9.03	9.52	9.94
Mercury	10	61	BDL	BDL	BDL	BDL	BDL	0.0334	BDL

* The site-specific cleanup objective calculated using geotechnical data from the site and Tier 2 procedures presented in the 35 IAC Part 742 regulations (June 1997).

TABLE 2 con'd
SUMMARY OF ANALYTICAL RESULTS
CONFIRMATORY SOIL SAMPLES
PEOPLES GAS PROPERTY

PARAMETER	RESIDENTIAL CLEANUP OBJECTIVE	COMMERCIAL/ INDUSTRIAL CLEANUP OBJECTIVE	E027A (5.5')	E028 (15')	E029 (12')	E030 (12')	E031 (12')	E032 (12')	E033 (10.5)	E034 (12')	E037 (12.5')
TARGET COMPOUND LIST - VOLATILE ORGANIC COMPOUNDS (ppm)											
Acetone	7,800	100,000	BDL	0.028	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	0.8	1.5	BDL	0.003	0.003	BDL	0.001	0.001	BDL	BDL	BDL
Bromodichloromethane	10	92	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	130	1.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	0.3	0.540	0.001	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	700	1,500	0.018	BDL	BDL	BDL	BDL	BDL	0.004	BDL	BDL
1,2-Dichloroethene (total)	780	1,200	3.98	0.004	0.001	0.008	0.001	BDL	0.343	0.046	BDL
Ethylbenzene	400	58	BDL	0.007	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	13	24	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	12*	110*	0.206	0.008	BDL	0.001	BDL	0.001	BDL	BDL	BDL
Toluene	650	42	BDL	0.004	0.001	0.001	BDL	0.001	BDL	BDL	BDL
1,1,1-Trichloroethane	1,200	1,200	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	310	1,800	0.008	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	58*	364*	5.96	BDL	BDL	BDL	BDL	BDL	7.56	BDL	BDL
Vinyl Acetate	1,000	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl chloride	0.300*	1.78*	0.580	0.004	BDL	0.011	BDL	BDL	BDL	0.016	BDL
Xylenes (total)	410	410	BDL	0.019	BDL	BDL	BDL	BDL	0.003	BDL	BDL
Other VOCs	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TOTAL METALS (ppm)											
Chromium	270	420	15.0	14.9	14.1	16.4	15.2	14.0	17.6	17.1	16.5
Lead	400	400	9.52	8.26	10.9	10.0	8.16	9.28	5.98	8.40	7.05
Mercury	10	61	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

* The site-specific cleanup objective calculated using geotechnical data from the site and Tier 2 procedures presented in the 35 IAC Part 742 regulations (June 1997).

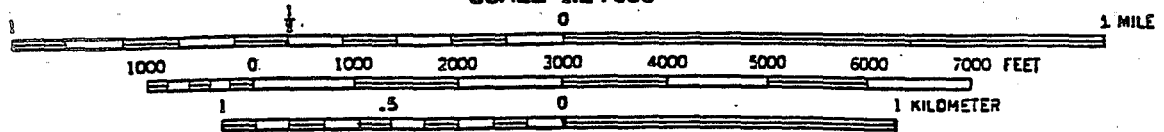
TABLE 2 con'd
SUMMARY OF ANALYTICAL RESULTS
CONFIRMATORY SOIL SAMPLES
PEOPLES GAS PROPERTY

PARAMETER	RESIDENTIAL CLEANUP OBJECTIVE	COMMERCIAL/ INDUSTRIAL CLEANUP OBJECTIVE	E038 (12')	E039 (12')	E040 (12')	E041 (11')	E042 (11.5')	E043 (11.5')	E045 (11.5')	E046 (12')	E047 (12')
TARGET COMPOUND LIST - VOLATILE ORGANIC COMPOUNDS (ppm)											
Acetone	7,800	100,000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	0.8	1.5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	10	92	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	130	1.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	0.3	0.540	BDL	0.003	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	700	1,500	BDL	BDL	BDL	BDL	0.008	BDL	BDL	BDL	BDL
1,2-Dichloroethene (total)	780	1,200	BDL	BDL	BDL	0.001	BDL	BDL	0.017	BDL	0.003
Ethylbenzene	400	58	BDL	BDL	BDL	BDL	0.002	BDL	BDL	BDL	BDL
Methylene Chloride	13	24	BDL	BDL	BDL	0.046	0.060	BDL	BDL	BDL	BDL
Tetrachloroethene	12*	110*	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	650	42	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	1,200	BDL	BDL	BDL	BDL	0.001	0.036	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	310	1,800	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	58*	364*	BDL	BDL	BDL	BDL	BDL	BDL	0.012	BDL	BDL
Vinyl Acetate	1,000	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl chloride	0.300*	1.78*	BDL	BDL	BDL	BDL	BDL	BDL	0.020	BDL	0.005
Xylenes (total)	410	410	BDL	BDL	BDL	BDL	0.006	BDL	BDL	BDL	BDL
Other VOCs	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TOTAL METALS (ppm)											
Chromium	270	420	10.9	13.0	13.2	16.2	17.8	18.6	16.9	18.0	16.2
Lead	400	400	7.49	10.6	8.96	11.1	12.1	9.90	10.8	7.76	5.49
Mercury	10	61	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

* The site-specific cleanup objective calculated using geotechnical data from the site and Tier 2 procedures presented in the 35 IAC Part 742 regulations (June 1997).



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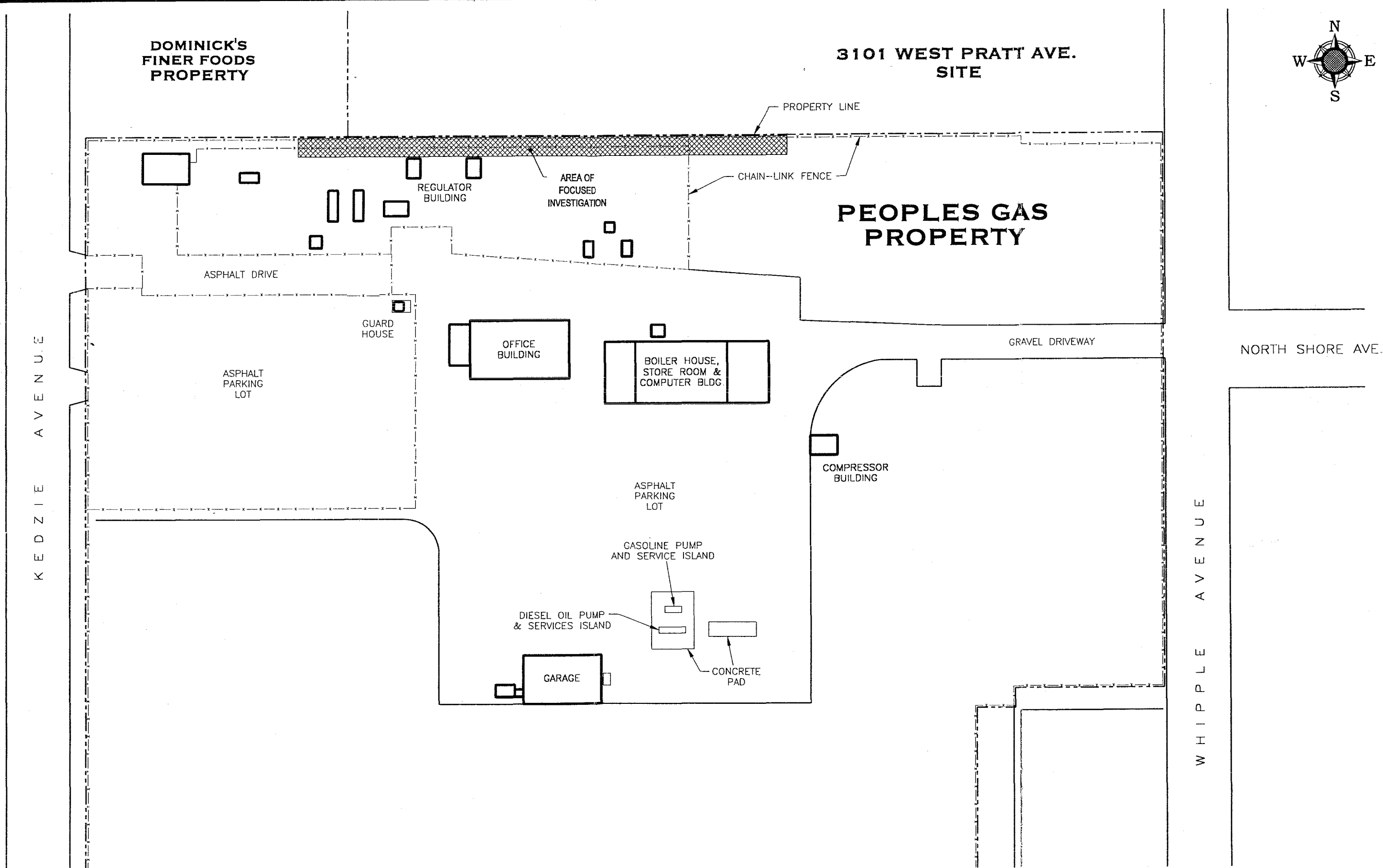
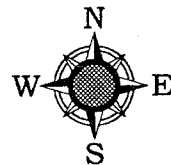


MAP REFERENCE:
U.S.G.S. QUADRANGLE MAP
7.5 MINUTE SERIES (TOPOGRAPHIC)
CHICAGO LOOP, ILLINOIS 1993
EVANSTON, ILLINOIS 1993

Figure 1

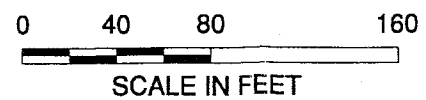
Site Location Map
People's Gas-Rogers Park Substation Facility
6659 North Kedzie Avenue
Chicago, Illinois

DAMES & MOORE



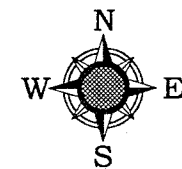
LEGEND:

- = PROPERTY LINE
- x-x-x-x- = CHAIN-LINK FENCE



PEOPLES GAS
ROGERS PARK SUBSTATION
6659 NORTH KEDZIE AVENUE
CHICAGO, ILLINOIS

FIGURE 2
SITE LAYOUT



PRATT AVENUE
BUILDING

DOMINICK'S
FINER FOODS

ASPHALT PAVED
PARKING AREA

FORMER BUTLER BUILDING

20' UTILITY EASEMENT

EXISTING 42" SEWER












POWER POLE

OVERHEAD ELECTRIC
LINES

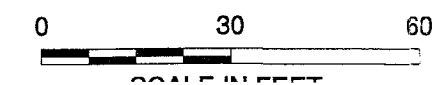
PEOPLES GAS
UNDERGROUND PIPING

PEOPLES GAS
PROPERTY

LEGEND:

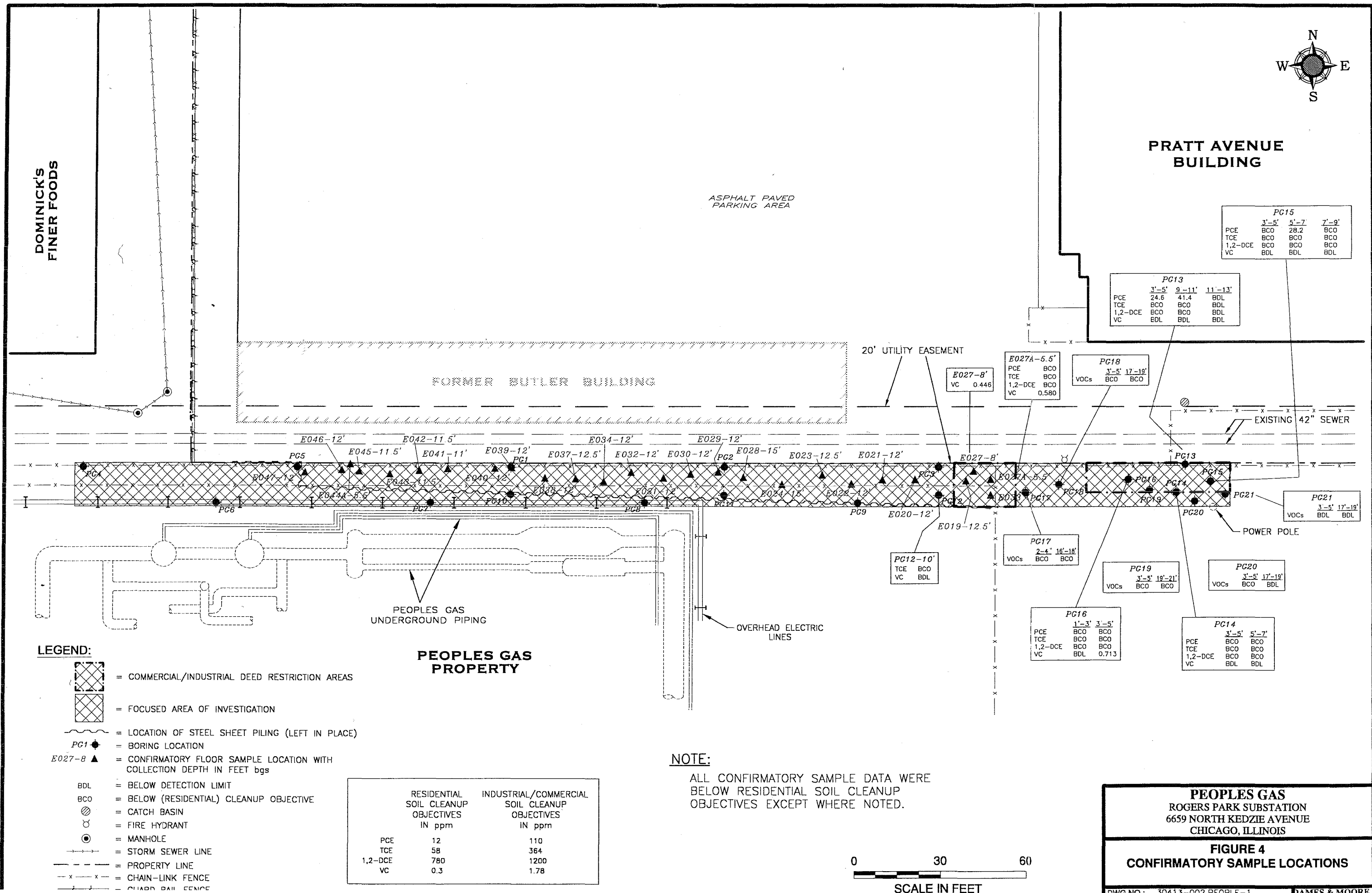
-  = COMMERCIAL/INDUSTRIAL DEED RESTRICTION AREAS
-  = FOCUSED AREA OF INVESTIGATION
-  = LOCATION OF STEEL SHEET PILING (LEFT IN PLACE)
-  = BORING LOCATION
-  = CATCH BASIN
-  = FIRE HYDRANT
-  = MANHOLE
-  = STORM SEWER LINES
-  = PROPERTY LINE
-  = CHAIN-LINK FENCE
-  = GUARD RAIL FENCE

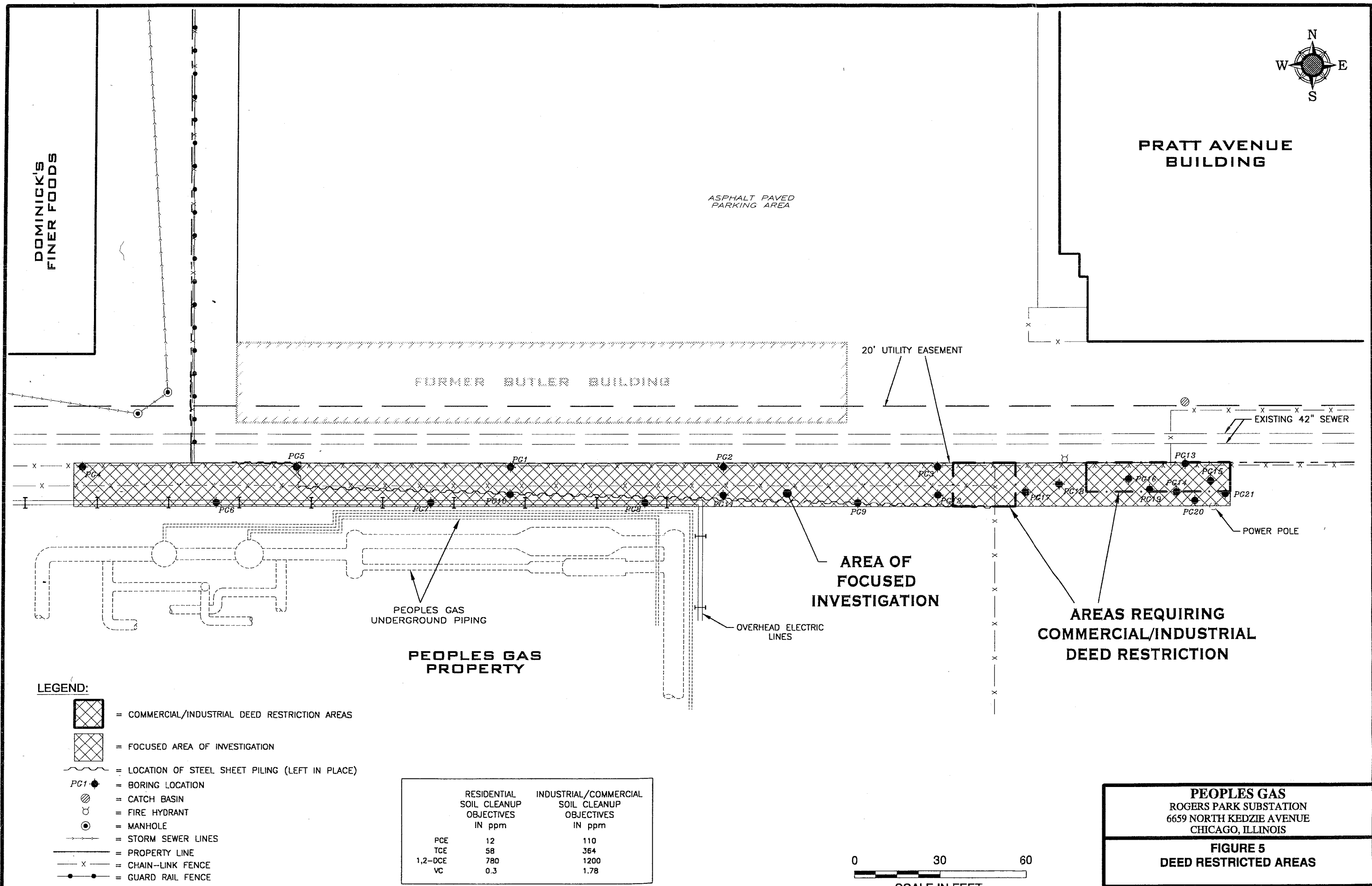
	RESIDENTIAL SOIL CLEANUP OBJECTIVES IN ppm	INDUSTRIAL/COMMERCIAL SOIL CLEANUP OBJECTIVES IN ppm
PCE	12	110
TCE	58	364
1,2-DCE	780	1200
VC	0.3	1.78



PEOPLES GAS
ROGERS PARK SUBSTATION
6659 NORTH KEDZIE AVENUE
CHICAGO, ILLINOIS

FIGURE 3
PEOPLES GAS PROPERTY
BORING LOCATIONS





Appendix A Soil Boring Logs



BORING PG-1

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
					5
	24				
					10
	80				
					15
	52				
					20
	29				
					25
	23				
					30
	22				
					35
	19				



Four-inch gravel surface.
Brown and dark brown silty CLAY to clayey SILT
with some fine to coarse sand and fine gravel.
(Slightly moist)

Olive gray silty CLAY to clayey SILT with some
fine sand. (Slightly moist)

Olive gray silty CLAY with some fine to coarse
sand. (Slightly moist)

Grades to (Very moist)

Boring completed at depth of 25 feet on 01-26-96.
Groundwater encountered at depth of 12 feet
during drilling on 01-26-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-2

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
	199		☒		5
	21		☒		10
	51		☒		15
	18		☒		20
	19		☒		25
	18		☒		30
	15		☒		35

GP
ML/CL
Four to six-inch gravel surface.
Olive gray silty CLAY to clayey SILT with some
fine to coarse sand. (Slightly moist)

ML
Olive gray sandy SILT. (Moist)

CL
Olive gray silty CLAY with some fine to coarse
sand. (Moist)

Olive gray silty CLAY with some fine sand.
(Moist)

ML
Olive gray sandy SILT.

CL
Olive gray silty CLAY.
Boring completed at depth of 25 feet on 01-26-96.
Groundwater encountered at depth of 8.5 feet
during drilling on 01-26-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-3

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
					GP
					CL
	49		☒		5
					10
	287		☒		10
	258		☒		15
	20		☒		15
					20
	193		☒		20
					25
	14		☒		25
					30
					35

Four-inch gravel surface.
Brown and yellowish brown silty CLAY with some
fine to coarse sand and gravel. (Fill)

No recovery.

Olive gray silty CLAY with some fine sand and
trace of brown silty clay. (Moist)

Olive gray silty CLAY with some fine sand. (Moist)

Grades with some fine gravel.

Olive gray silty CLAY with some fine sand. (Moist)

Boring completed at depth of 25 feet on 01-26-96.
Groundwater encountered at depth of 9 feet during
drilling on 01-26-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-4

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
					5
	17				10
	13				15
	30				20
	17				25
	16				30
					35

Four-inch gravel surface.
Black and dark brown silty CLAY with some fine to coarse sand and gravel. (Slightly moist)

Olive gray silty CLAY with some fine sand. (Moist)

Brownish gray silty CLAY with some fine to coarse sand and gravel. (Moist)

Olive gray silty CLAY with some clayey sand. (Moist)

Boring completed at depth of 25 feet on 01-26-96.
Groundwater encountered at depth of 14 feet during drilling on 01-26-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-5

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
			☒		5
			☒		10
	21		☒		11.5
	23		☒		13
	17		☒		15
	21		☒		20
	18		☒		25
					30
					35

GP
SC/CL

Four-inch gravel surface.
Dark gray silty CLAY to clayey SILT with some
fine sand and gravel. (Slightly dry)

Dark gray silty CLAY with some fine to coarse
sand and gravel.

Olive gray silty CLAY with some fine sand.
(Slightly moist to very moist)

Grades to (Moist)

Boring completed at depth of 25 feet on 01-26-96.
Groundwater encountered at depth of 11.5 feet
during drilling on 01-26-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-6

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
					5
	2.0		☒		8
					10
	2.5		☒		12
					15
	4.5		☒		18
					20
	3.2		☒		22
					25
	5.3		☒		28
					30
					35

Four-inch gravel surface.
Hole was pre-augered to six-feet.
Four to six-inch gravel surface overlying dark brown silty CLAY fill with some sand and gravel.

Dark gray fine to coarse sand. (Very moist)

Dark gray and olive gray silty CLAY. (Very moist)

Dark gray silty CLAY with fine to coarse sand. (Wet)

Olive gray silty CLAY with some sand. (Moist)

Boring completed at depth of 25 feet on 01-25-96.
Groundwater encountered at depth of 8 feet during drilling on 01-25-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-7

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
				GP	
				CL	
					5
	0.6		⊗		
			⊗		
					10
	2.4		⊗	SP	
				CL	
	0.6		⊗	SP	
				CL	
					15
	1.4		⊗		
					20
	1.1				
					25
					30
					35

Three to five-inch gravel surface.
Hole was pre-augered to six-feet.
Brown and olive gray silty CLAY with some fine to coarse sand.

Olive gray with some trace of brown to brownish yellow silty CLAY with some fine sand. (Moist)

Olive gray silty CLAY with layer of brown medium to coarse sand. (Wet)

Olive gray fine to coarse SAND with fine gravel.
Olive gray silty CLAY with fine sand. (Very moist)
Olive gray silty CLAY with some fine sand. (Moist)

Grades to (Very moist)

Boring completed at depth of 25 feet on 01-25-96.
Groundwater encountered at depth of 9 feet during drilling on 01-25-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-8

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
					0
				GP	
				CL	
				SP	
					5
	3.0		☒	CL	
			☒	SP	
					10
	1.5		☒	CL	
	5.4		☒		
					15
	3.2		☒		
					20
	4.6				
					25
					30
					35

Four to six-inch gravel surface.
Brown and gray silty CLAY. (Fill)
Hole pre-augered to six-feet.

Brown fine to coarse SAND.

Olive gray silty CLAY with some fine to coarse sand and medium gravel. (Very moist)

Brownish yellow fine to coarse SAND and some gravel. (Wet)

Olive gray silty CLAY with some fine sand. (Very moist)

Boring completed at depth of 25 feet on 01-25-96.
Groundwater encountered at depth of 9 feet during drilling on 01-25-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-9

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT)	WATER LEVEL
					0	GP
						CL
					5	
	19		X			
	26		X		10	
	26					
	22					
					15	
	24					
					20	
	13					
					25	
					30	
					35	

Six-inch gravel surface.
Brown and gray silty CLAY with some fine to coarse sand and gravel.
Hole pre-augered to six-feet.

Olive gray silty CLAY with some fine sand and pockets of dark silty clay. (Very moist)

Olive gray silty CLAY with some sand. (Very moist to wet)

Olive gray silty CLAY. (Very moist)

Olive gray sandy SILT. (Very moist)

Boring completed at depth of 25 feet on 01-25-96.
Groundwater encountered at depth of 8.5 feet during drilling on 01-25-96.

NOTE:

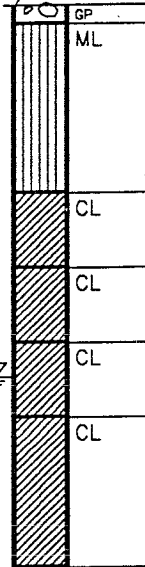
Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-10

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
	1.5				0
	1.9				
	1.6				5
	1.1				
	1.4				10
	0.7				
	0.8				
					15
					20
					25
					30
					35



Five-inch gravel surface.
Yellowish red sandy SILT.
(Medium dense) (Slightly moist)

Yellowish red and dark brown sandy SILT.
(Slightly moist)

Olive gray and dark brown silty CLAY with some
fine sand. (Soft) (Moist)

Olive gray silty CLAY with some fine sand.
(Soft) (Moist)

Olive gray silty CLAY with some fine sand.
(Soft) (Wet)

Olive gray silty CLAY.

Olive gray silty CLAY. (Medium stiff) (Moist)

Boring completed at depth of 15 feet and
backfilled with bentonite on 08-21-96.
Groundwater encountered at depth of 10 feet
during drilling on 08-21-96.

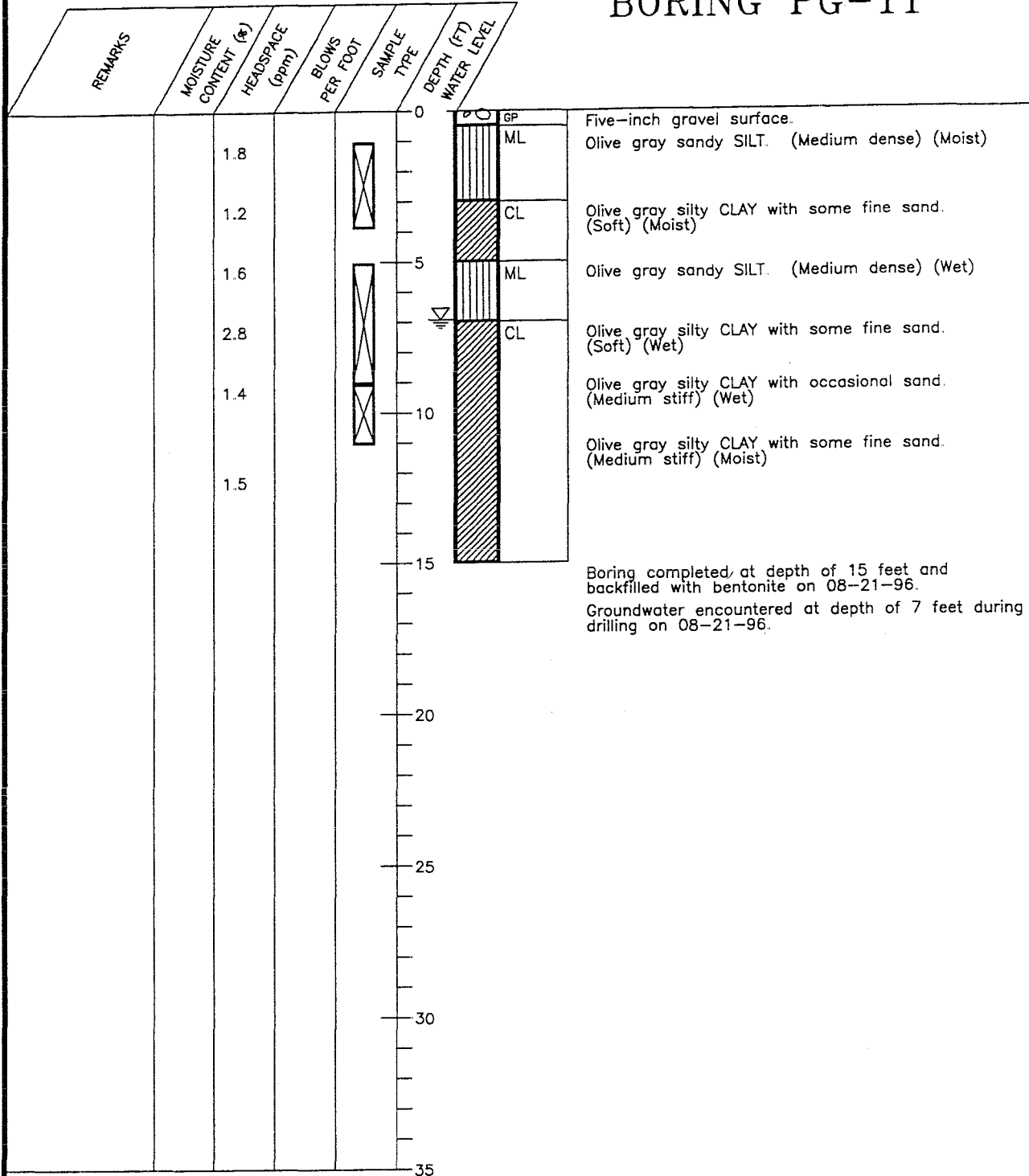
NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-11



NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-12

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
	1.1			CL	0
	1.4			CL	
	0.9			CL	5
	0.8			CL	
	2.6				10
	1.6				
	1.2				
					15
					20
					25
					30
					35

Three-inch gravel surface.

Dark brown silty CLAY with some fine sand and coarse gravel. (Soft) (Dry) (Fill)

Olive gray silty CLAY with some fine sand. (Soft) (Moist)

Olive gray silty CLAY with some fine sand. (Medium stiff) (Moist)

Olive gray silty CLAY with some fine sand. (Medium stiff) (Moist)

Olive gray silty CLAY with some fine gravel and fine sand. (Soft) (Moist)

Olive gray silty CLAY with some fine sand. (Soft) (Moist)

Boring completed at depth of 15 feet and backfilled with bentonite on 08-21-96.

Groundwater was not encountered during drilling on 08-21-96.

NOTE:

Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-13

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
	5.0				0
	4.8				
	3.6				5
	2.5				
	2.9				10
	2.6				
	3.0				15
					20
					25
					30
					35

Three-inch asphalt and gravel surface.

Dark brown and yellowish red silty CLAY with occasional coarse gravel and some fine sand. (Stiff) (Dry) (Fill)

Brown and yellowish red silty CLAY with some fine sand and some fine gravel.

Dark brown silty CLAY with some fine sand. (Stiff) (Dry)

Olive gray silty CLAY with some fine sand. (Medium stiff) (Moist)

Olive gray silty CLAY with some fine sand. (Soft) (Moist)

Boring completed at depth of 15 feet and backfilled with bentonite on 08-21-96.

Groundwater was not encountered during drilling on 08-21-96.

NOTE:

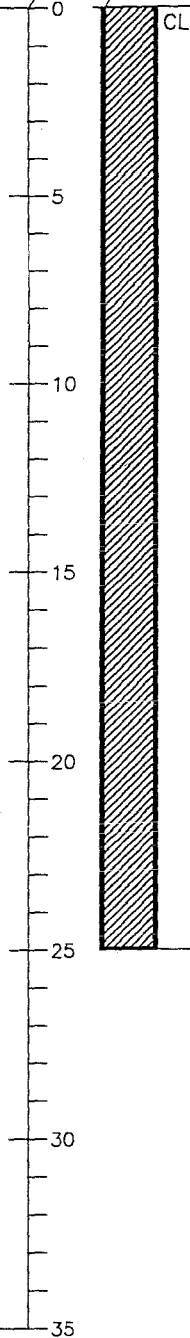
Headspace readings were obtained using PID.

LOG OF BORING

DAMES & MOORE

BORING PG-17

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
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Dark gray to black silty CLAY with some sand and gravel and roots. (No odor)

Grades to brown and gray silty CLAY with some sand and gravel. (Stiff) (Moist)

Grades to olive gray silty CLAY with some sand and gravel. (Medium stiff) (Moist)

Grades to (Soft) (Very moist)

Boring completed at depth of 25 feet on 12-12-97.
Groundwater was not encountered during drilling.

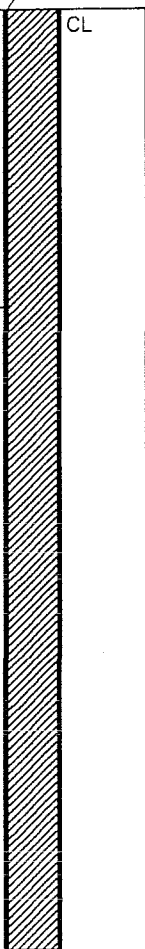
Logged by LAS 12-15-1997 SuperLOG V 2.0, 3-1991

LOG OF BORING

DAMES & MOORE

BORING PG-18

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
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CL

Black and dark gray silty CLAY with some sand and roots. (Moist)

Grades to brown and gray silty CLAY with some sand and gravel. (Stiff) (Moist)

Grades with 6-inch seam of sand and gravel. (Wet)

Grades to olive gray with trace of brown silty CLAY with some sand and gravel. (Stiff) (Moist)

Grades to (Soft) (Very moist)

Boring completed at depth of 25 feet on 12-12-97.
Groundwater encountered at depth of 8 feet during drilling on 12-12-97.

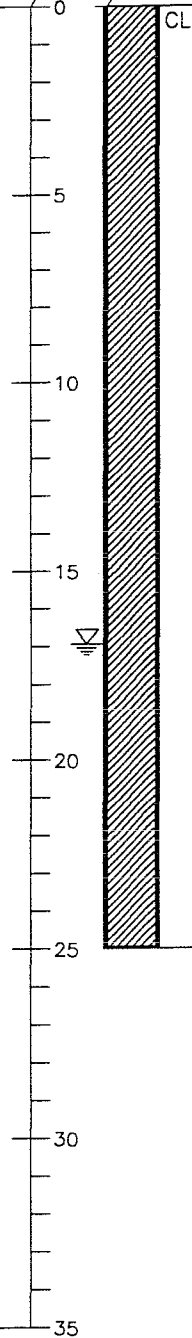
LOG OF BORING

DAMES & MOORE

Logged by LAS 12-15-1997 SuperLOG V 2.0, 3-1991

BORING PG-19

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT)	WATER LEVEL
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Black and dark gray silty CLAY with some sand and roots. (Moist)

Grades to brown and gray silty CLAY with some sand and gravel. (Stiff) (Moist)

Grades to olive gray.

Grades to (Soft) (Very moist)

Boring completed at depth of 25 feet on 12-12-97.
Groundwater encountered at depth of 17 feet during drilling on 12-12-97.

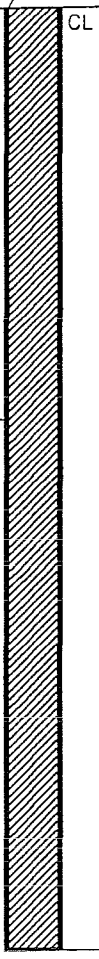
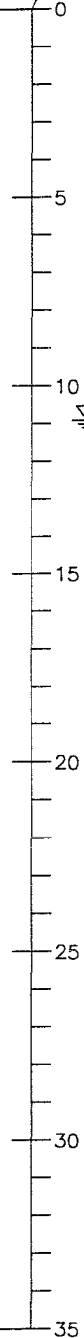
Logged by LAS 12-15-1997 SuperLOG V 2.0, 3-1991

LOG OF BORING

DAMES & MOORE

BORING PG-20

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
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Black and dark gray silty CLAY with sand and roots. (Moist)

Grades to brown and gray silty CLAY with some sand and gravel. (Stiff) (Moist)

Grades to olive gray. (Soft) (Very moist)

Grades with thin layer of fine to coarse sand and fine gravel. (Wet)

Boring completed at depth of 25 feet on 12-12-97.
Groundwater encountered at depth of 11 feet during drilling on 12-12-97.

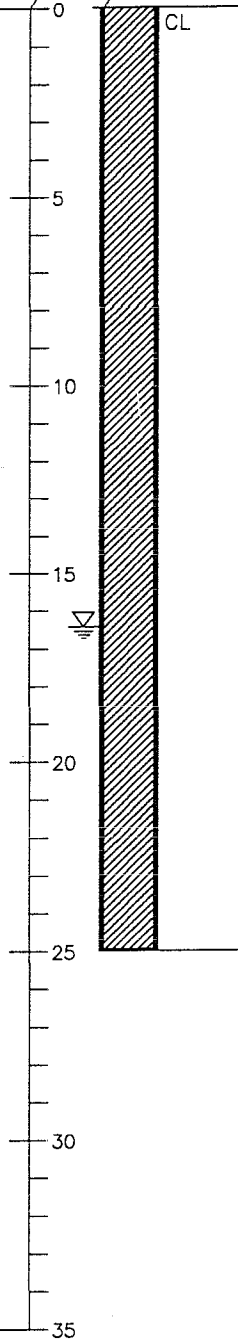
Logged by LAS 12-15-1997 SUpErLOG V 2.0, 3-1991

LOG OF BORING

DAMES & MOORE

BORING PG-21

REMARKS	MOISTURE CONTENT (%)	HEADSPACE (ppm)	BLOWS PER FOOT	SAMPLE TYPE	DEPTH (FT) WATER LEVEL
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CL

Black and dark gray silty CLAY with sand and roots. (Moist)

Brown and gray silty CLAY with some sand and gravel. (Stiff) (Moist)

Grades to gray with brown.

Grades to olive gray. (Soft) (Very moist)

Boring completed at depth of 25 feet on 12-12-97.
Groundwater encountered at depth of 16.5 feet during drilling on 12-12-97.

LOG OF BORING

DAMES & MOORE

Appendix B

Geotechnical Data



Tier 2 SSL Comparison
Site-Specific Geotechnical and Analytical Data
CP Clare Corporation/General Instrument Corporation Site
Chicago, Illinois

	Original Values ¹	New Values												Average New Data ²
Sample Location	2 locations	SB-47	SB-47	SB-47	SB-48	SB-48	SB-49	SB-49	SB-49	SB-49	SB-50	SB-50	SB-50	
Sample Depth (feet bgs)	27-28 and 9-10 (avg)	2'-4'	4'-6'	8'-10'	4'-6'	6'-8'	2'-4'	4'-6'	6'-8'	8'-10'	2'-4'	6'-8'	8'-10'	
Moisture Content	21 %	N/A	25.2%	N/A	N/A	26.6%	N/A	25.5%	N/A	12.9%	25.6%	N/A	27.4%	23.9%
Dry Bulk Density	1.76 gm/cc	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.89	N/A	N/A	1.59	1.74
Specific Gravity	2.76 gm/cc	N/A	2.89	N/A	N/A	2.83	N/A	2.76	N/A	2.73	2.81	N/A	2.80	2.80
Fraction Organic Carbon	0.02925	0.0145	N/A	0.0414	>0.06	N/A	0.0241	N/A	0.0387	N/A	N/A	>0.06	N/A	0.0398

¹ Site-specific variables used in original derivation of Tier 2 inhalation SSL values for chloroform, 1,1-dichloroethene, trichloroethene, tetrachloroethene, and vinyl chloride from equations.

² Averaged values for site-specific variables based on new soil samples obtained at depths above residential basement floor elevations. No net effect to the outcome regarding applicable SSLs results from use of the newly determined site-specific variables in the Tier 2 inhalation equations. The outcome is such that inhalation values become so large that Tier 1 ingestion SSL values become the default soil cleanup objective.

Appendix C

Tier 2 Calculations



SSL for INHALATION OF CARCINOGENIC CONTAMINANTS RESIDENTIAL
LAST REVISED ON 15 SEPTEMBER 1997 BY JS

Site = CP CLARE

Date = 15 SEPTEMBER 1997, JS

Contaminant of concern = TETRACHLOROETHYLENE (PCE)
Site Scenario = RESIDENTIAL
USING DEFAULT VALUES FOR CLAY
CALCULATED SSL (mg/kg) = 461.5174

Calculated Csat (mg/kg) = 1179.581

Where:

TR = 1.00E-06 (default)
ATc (yr) = 70 (default)
URF = 5.8E-07 (toxicological specific value, in m3/ug)
EF (d/yr) = 350 (default by site scenario)
ED (yr) = 30 (default by site scenario)
VF = 110005.5 (calculated--see parameters below, in m3/kg)

Derivation of Volatilization Factor (VF)

Q/C = 68.81 (default by site scenario, in (g/m2s)/(kg/m3))
T (s) = 9.5E+08 (default by site scenario)
Da = 1.04E-06 (calculated, in cm2/s)
Air-filled soil porosity = 0.041753 (calculated in L_{air}/L_{soil})
Di = 0.072 (chemical specific in cm2/s)
n = 0.401786 (calculated in L_{pore}/L_{soil})
w = 0.239 (site specific in g/g)
Dry soil bulk density = 1.675 (site specific in g/cm3)
Soil particle density = 2.8 (site specific in g/cm3)
H' = 0.754 (chemical specific)
Kd = 5.664165 (calculated in cm3/g)
Koc = 155 (chemical specific in cm3/g)
foc = 0.036543 (site specific in g/g)
S = 200 (chemical specific in mg/L)
Water-filled soil por. = 0.360033 (calculated in L_{water}/L_{soil})
Dw = 8.2E-06 (chemical specific in cm2/s)
I = 0.3 (default)
Ks = 5 (default by soil type, APPENDIX C TABLE K, in m/yr)
 $1/(2b+3)$ = 0.039 (default by soil type, APPENDIX C TABLE K)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS

LAST REVISED ON 25 FEBRUARY 1997 BY JS

Site = CP CLARE

Date = 10 APRIL 1997, JS

Contaminant of concern = TETRACHLOROETHYLENE (PCE)

Site Scenario = CONSTRUCTION WORKER (CLAY)

CALCULATED SSL (mg/kg) = 1240.029

Calculated Csat (mg/kg) = 1179.581

Where:

TR = 1.00E-06 (default--1.0E-4 to 1.0E-6)

ATc = 70 (default)

URF = 5.8E-07 (toxicological specific value)

EF = 30 (default by site scenario)

ED = 1 (default by site scenario)

VF' = 844.4818 (calculated--see parameters below)

Derivation of Volatilization Factor (VF')

Q/C = 85.81 (default by site scenario)

T = 3600000 (default by site scenario)

Da = 1.04E-06 (calculated)

Air-filled soil porosity = 0.041753 (calculated)

Di = 0.072 (chemical specific)

n = 0.401786 (calculated)

w = 0.239 (site specific)

Dry soil bulk density = 1.675 (site specific)

Soil particle density = 2.8 (site specific)

Kas = 0.133118 (calculated)

H' = 0.754 (chemical specific)

Kd = 5.664165 (calculated)

Koc = 155 (chemical specific)

foc = 0.036543 (site specific)

S = 200 (chemical specific)

Water-filled soil por. = 0.360033 (calculated)

Dw = 8.2E-06 (chemical specific)

l = 0.3 (default)

Ks = 5 (default by soil type)

1/(2b+3) = 0.039 (default by soil type)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS

LAST REVISED ON 25 FEBRUARY 1997 BY JS

Site = CP CLARE

Date = 10 APRIL 1997, JS

Contaminant of concern = TETRACHLOROETHYLENE (PCE)

Site Scenario = INDUSTRIAL/COMMERCIAL (CLAY)

CALCULATED SSL (mg/kg) = 881.7297

Calculated Csat (mg/kg) = 1179.581

Where:

TR = 1.00E-06 (default--1.0E-4 to 1.0E-6)
ATc = 70 (default)
URF = 5.8E-07 (toxicological specific value)
EF = 250 (default by site scenario)
ED = 25 (default by site scenario)
VF = 125098.6 (calculated--see parameters below)

Derivation of Volatilization Factor (VF)

Q/C = 85.81 (default by site scenario)
T = 7.9E+08 (default by site scenario)
Da = 1.04E-06 (calculated)
Air-filled soil porosity = 0.041753 (calculated)
Di = 0.072 (chemical specific)
n = 0.401786 (site specific)
w = 0.239 (site specific)
Dry soil bulk density = 1.675 (site specific)
Soil particle density = 2.8 (site specific)
Kas = 0.133118 (calculated)
H' = 0.754 (chemical specific)
Kd = 5.664165 (calculated)
Koc = 155 (chemical specific)
foc = 0.036543 (site specific)
S = 200 (chemical specific)
Water-filled soil por. = 0.360033 (calculated)
Dw = 8.2E-06 (chemical specific)
Ks = 5 (site specific)
1/(2b+3) = 0.039 (site specific)
l = 0.3 (default)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS RESIDENTIAL
LAST REVISED ON 15 SEPTEMBER 1997 BY JS

Site = CP CLARE

Date = 15 SEPTEMBER 1997, JS

Contaminant of concern = TRICHLOROETHYLENE (TCE)

Site Scenario = RESIDENTIAL

USING DEFAULT VALUES FOR CLAY

CALCULATED SSL (mg/kg) = 190.4925

Calculated Csat (mg/kg) = 6920.763

Where:

TR = 1.00E-06 (default)

ATc (yr) = 70 (default)

URF = 1.74E-06 (toxicological specific value, in m3/ug)

EF (d/yr) = 350 (default by site scenario)

ED (yr) = 30 (default by site scenario)

VF = 136215.2 (calculated—see parameters below, in m3/kg)

Derivation of Volatilization Factor (VF)

Q/C = 68.81 (default by site scenario, in (g/m2s)/(kg/m3))

T (s) = 9.5E+08 (default by site scenario)

Da = 6.78E-07 (calculated, in cm2/s)

Air-filled soil porosity = 0.041753 (calculated in L_{air}/L_{soil})

Di = 0.079 (chemical specific in cm2/s)

n = 0.401786 (calculated in L_{pore}/L_{soil})

w = 0.239 (site specific in g/g)

Dry soil bulk density = 1.675 (site specific in g/cm3)

Soil particle density = 2.8 (site specific in g/cm3)

H' = 0.422 (chemical specific)

Kd = 6.066138 (calculated in cm3/g)

Koc = 166 (chemical specific in cm3/g)

foc = 0.036543 (site specific in g/g)

S = 1100 (chemical specific in mg/L)

Water-filled soil por. = 0.360033 (calculated in L_{water}/L_{soil})

Dw = 9.1E-06 (chemical specific in cm2/s)

I = 0.3 (default)

Ks = 5 (default by soil type, APPENDIX C TABLE K, in m/yr)

$1/(2b+3)$ = 0.039 (default by soil type, APPENDIX C TABLE K)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS

LAST REVISED ON 25 FEBRUARY 1997 BY JS

Site = CP CLARE

Date = 10 APRIL 1997, JS

Contaminant of concern = TRICHLOROETHYLENE (TCE)

Site Scenario = CONSTRUCTION WORKER (CLAY)

CALCULATED SSL (mg/kg)= 511.8254

Calculated Csat (mg/kg) = 6920.763

Where:

TR = 1.00E-06 (default--1.0E-4 to 1.0E-6)

ATc = 70 (default)

URF = 1.74E-06 (toxicological specific value)

EF = 30 (default by site scenario)

ED = 1 (default by site scenario)

VF' = 1045.686 (calculated--see parameters below)

Derivation of Volatilization Factor (VF')

Q/C = 85.81 (default by site scenario)

T = 3600000 (default by site scenario)

Da = 6.78E-07 (calculated)

Air-filled soil porosity = 0.041753 (calculated)

Di = 0.079 (chemical specific)

n = 0.401786 (calculated)

w = 0.239 (site specific)

Dry soil bulk density = 1.675 (site specific)

Soil particle density = 2.8 (site specific)

Kas = 0.069567 (calculated)

H' = 0.422 (chemical specific)

Kd = 6.066138 (calculated)

Koc = 166 (chemical specific)

foc = 0.036543 (site specific)

S = 1100 (chemical specific)

Water-filled soil por. = 0.360033 (calculated)

Dw = 9.1E-06 (chemical specific)

I = 0.3 (default)

Ks = 5 (default by soil type)

1/(2b+3)= 0.039 (default by soil type)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS

LAST REVISED ON 25 FEBRUARY 1997 BY JS

Site = CP CLARE

Date = 10 APRIL 1997, JS

Contaminant of concern = TRICHLOROETHYLENE (TCE)

Site Scenario = INDUSTRIAL/COMMERCIAL (CLAY)

CALCULATED SSL (mg/kg) = 363.9363

Calculated Csat (mg/kg) = 6920.763

Where:

TR = 1.00E-06 (default--1.0E-4 to 1.0E-6)

ATc = 70 (default)

URF = 1.74E-06 (toxicological specific value)

EF = 250 (default by site scenario)

ED = 25 (default by site scenario)

VF = 154904.4 (calculated--see parameters below)

Derivation of Volatilization Factor (VF)

Q/C = 85.81 (default by site scenario)

T = 7.9E+08 (default by site scenario)

Da = 6.78E-07 (calculated)

Air-filled soil porosity = 0.041753 (calculated)

Di = 0.079 (chemical specific)

n = 0.401786 (site specific)

w = 0.239 (site specific)

Dry soil bulk density = 1.675 (site specific)

Soil particle density = 2.8 (site specific)

Kas = 0.069567 (calculated)

H' = 0.422 (chemical specific)

Kd = 6.066138 (calculated)

Koc = 166 (chemical specific)

foc = 0.036543 (site specific)

S = 1100 (chemical specific)

Water-filled soil por. = 0.360033 (calculated)

Dw = 9.1E-06 (chemical specific)

Ks = 5 (site specific)

1/(2b+3) = 0.039 (site specific)

l = 0.3 (default)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS RESIDENTIAL
LAST REVISED ON 15 SEPTEMBER 1997 BY JS

Site = CP CLARE

Date = 15 SEPTEMBER 1997, JS

Contaminant of concern = VINYL CHLORIDE

Site Scenario = RESIDENTIAL

USING DEFAULT VALUES FOR CLAY

CALCULATED SSL (mg/kg) = 0.930252

Calculated Csat (mg/kg) = 1623.272

Where:

TR = 1.00E-06 (default)

ATc (yr) = 70 (default)

URF = 8.4E-05 (toxicological specific value, in m3/ug)

EF (d/yr) = 350 (default by site scenario)

ED (yr) = 30 (default by site scenario)

VF = 32112.79 (calculated—see parameters below, in m3/kg)

Derivation of Volatilization Factor (VF)

Q/C = 68.81 (default by site scenario, in (g/m2s)/(kg/m3))

T (s) = 9.5E+08 (default by site scenario)

Da = 1.22E-05 (calculated, in cm2/s)

Air-filled soil porosity = 0.041753 (calculated in L_{air}/L_{soil})

Di = 0.106 (chemical specific in cm2/s)

n = 0.401786 (calculated in L_{pore}/L_{soil})

w = 0.239 (site specific in g/g)

Dry soil bulk density = 1.675 (site specific in g/cm3)

Soil particle density = 2.8 (site specific in g/cm3)

H' = 1.11 (chemical specific)

Kd = 0.6797 (calculated in cm3/g)

Koc = 18.6 (chemical specific in cm3/g)

foc = 0.036543 (site specific in g/g)

S = 1760 (chemical specific in mg/L)

Water-filled soil por. = 0.360033 (calculated in L_{water}/L_{soil})

Dw = 1.23E-06 (chemical specific in cm2/s)

I = 0.3 (default)

Ks = 5 (default by soil type, APPENDIX C TABLE K, in m/yr)

1/(2b+3) = 0.039 (default by soil type, APPENDIX C TABLE K)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS

LAST REVISED ON 25 FEBRUARY 1997 BY JS

Site = CP CLARE

Date = 10 APRIL 1997, JS

Contaminant of concern = VINYL CHLORIDE

Site Scenario = CONSTRUCTION WORKER (CLAY)

CALCULATED SSL (mg/kg)= 2.499449

Calculated Csat (mg/kg) = 1623.272

Where:

TR = 1.00E-06 (default--1.0E-4 to 1.0E-6)
ATc = 70 (default)
URF = 8.4E-05 (toxicological specific value)
EF = 30 (default by site scenario)
ED = 1 (default by site scenario)
VF' = 246.521 (calculated--see parameters below)

Derivation of Volatilization Factor (VF')

Q/C = 85.81 (default by site scenario)
T = 3600000 (default by site scenario)
Da = 1.22E-05 (calculated)
Air-filled soil porosity = 0.041753 (calculated)
Di = 0.106 (chemical specific)
n = 0.401786 (calculated)
w = 0.239 (site specific)
Dry soil bulk density = 1.675 (site specific)
Soil particle density = 2.8 (site specific)
Kas = 1.633074 (calculated)
H' = 1.11 (chemical specific)
Kd = 0.6797 (calculated)
Koc = 18.6 (chemical specific)
foc = 0.036543 (site specific)
S = 1760 (chemical specific)
Water-filled soil por. = 0.360033 (calculated)
Dw = 1.23E-06 (chemical specific)
l = 0.3 (default)
Ks = 5 (default by soil type)
1/(2b+3) = 0.039 (default by soil type)

SSL for INHALATION OF CARCINOGENIC CONTAMINANTS

LAST REVISED ON 25 FEBRUARY 1997 BY JS

Site = CP CLARE

Date = 10 APRIL 1997, JS

Contaminant of concern = VINYL CHLORIDE

Site Scenario = INDUSTRIAL/COMMERCIAL (CLAY)

CALCULATED SSL (mg/kg) = 1.777247

Calculated Csat (mg/kg) = 1623.272

Where:

TR = 1.00E-06 (default--1.0E-4 to 1.0E-6)
ATc = 70 (default)
URF = 8.4E-05 (toxicological specific value)
EF = 250 (default by site scenario)
ED = 25 (default by site scenario)
VF = 36518.77 (calculated--see parameters below)

Derivation of Volatilization Factor (VF)

Q/C = 85.81 (default by site scenario)
T = 7.9E+08 (default by site scenario)
Da = 1.22E-05 (calculated)
Air-filled soil porosity = 0.041753 (calculated)
Di = 0.106 (chemical specific)
n = 0.401786 (site specific)
w = 0.239 (site specific)
Dry soil bulk density = 1.675 (site specific)
Soil particle density = 2.8 (site specific)
Kas = 1.633074 (calculated)
H' = 1.11 (chemical specific)
Kd = 0.6797 (calculated)
Koc = 18.6 (chemical specific)
foc = 0.036543 (site specific)
S = 1760 (chemical specific)
Water-filled soil por. = 0.360033 (calculated)
Dw = 1.23E-06 (chemical specific)
Ks = 5 (site specific)
1/(2b+3) = 0.039 (site specific)
I = 0.3 (default)

Appendix D

Professional Engineer Certification



PROFESSIONAL ENGINEER CERTIFICATION

I attest that all site investigations and remedial activities that are the subject of this plan or report were performed under my direction and this document and all attachments were prepared under my direction or reviewed by me, and to the best of my knowledge and belief, the work described in the plan or report has been designed or completed in accordance with the Act, 35 Ill. Adm. Code 740, and generally accepted engineering practices, and the information presented is accurate and complete.

Gail Artrip

Name - Title

062-046109

Illinois P.E. Number

Gail Artrip

Signature

November 12, 1998

Date

